MITEL

MIVOICE BUSINESS

SITE PLANNING GUIDE

MITEL MIVOICE BUSINESS RELEASE 7.0

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Introduction

Purpose of This Guide

This guide helps you plan new Mitel MiVoice Business sites. Use the tables in this guide to

- collect site information
- identify site requirements
- determine system engineering requirements
- record licensing requirements
- record versions of existing system and application software.

Who This Guide is Written For

This guide is for Mitel MiVoice Business certified technicians and sales engineers.

Finding Product Information

This guide refers you to other Mitel customer documentation for information and detailed procedures.

Access eDocs for the Latest Documentation

The Mitel Customer Documentation (eDocs) site on Mitel OnLine provides the latest customer documentation. The documentation for the current and previous product release are available from the main page. The documentation for other past releases is available from the Documentation Library link.

To view the available documentation, you require

- Internet access (high-speed is recommended)
- Web browser (e.g., Internet Explorer, Mozilla Firefox)
- Adobe® Acrobat® Reader 4.0 or later
- Microsoft® Word 97 or later
- your Mitel OnLine user name and password (required to access technical documentation; user documentation is not password protected)

To access a technical document

1. Log into Mitel OnLine.
2. From Mitel OnLine, click **Products**.
3. Click **Product Documentation**.
4. Bookmark this URL.
5. In the left frame, select the product.
6. In the right frame, click the document.
7. To access a generic user guide or quick reference card, click **User Guides**, click the desired language at the top of the frame, and then click the desired guide or quick reference card.

Downloading Generic User Guides

You can download telephone user guides and quick reference cards in .pdf format from the eDocs site and then print copies for your customers. User guides and quick reference cards are available in multiple languages.

The procedures described in the generic user guides use the system default feature access codes.

Finding Out What's New

A "What's New in This Release" topic in the MiVoice Business System Administration Tool Help describes the new functionality and documentation improvements that have been added in the latest product release. The topic provides a brief description of the new functionality and links to the details. This topic is displayed when you launch the System Administration Tool Help.

Checking the Knowledge Base

The Knowledge Base is your source for product information. It covers a wide range of technical support procedures. All new Technical Bulletins (TBs), Release Notes (RNs), How to Guides, and Troubleshooting guides are posted in the Knowledge Base.

To access the Knowledge Base:

1. Log into Mitel OnLine.
2. From Mitel OnLine, click **Technical** and then click **Knowledge Base**.
3. Select the product name (for example, Mitel MiVoice Business).
4. Select the type of article you are looking for or choose **All**.
5. Click **Search**.

Site Information

Table 1. Collecting Site Information

Step	Details
1. List site information	
Company name	
Address	
State/Province/Country	
ZIP/Postal Code	
Time zone	
List contact information	
Contact name	
Telephone	
Cell phone	
Email address	
2. List Authorized Partner information	
VAR/Partner name	
Address	
City	
State/Prov	
ZIP/Postal Code	
State Prov	
Country	
Time Zone	
3. Identify technical staff (that manages above site)	
Technician's name	Current MiVoice Business certification level
-	
-	
4. Complete pre-installation VoIP Site Survey	
5. Complete data network assessment	
6. Obtain customer site floor plan	

Step	Details
Site plan should identify:	Site locations Trunk requirements Numbering plans Building layout Existing PBXs Existing cable runs Equipment rooms LAN information
7. Obtain information on site power distribution, backup power, and the physical distribution.	
8. TDM services such as fax and modems. Modems do not function across IP trunks and fax works under limited settings. A T.38 gateway is recommended if fax is required. - Physical and logical distribution of phones - Emergency support (for example, 911, 999, or 112) - PSTN trunk connections, gateway requirements, compression, IP networking - Location of applications - voice mail, auto attendant, and so forth - TDM services such as fax and modems. Modems do not function across IP trunks and fax works under limited settings. A T.38 gateway is recommended if fax is required.	
9. Obtain IP addresses for controllers and IP phones. **Note:** The controller reserves some IP Addresses for internal use. Network devices must not use these reserved IP addresses or there will be IP address conflicts. Refer to the Engineering Guidelines for IP Address restrictions.	
10. Obtain and review Layer 2 switch settings with customer.	
11. Consider the requirements for spare hardware, response time, and available resources in the event of a failure. Is resiliency or network redundancy required?	
12. Consider requirements for future growth. Does the solution need to simply meet current requirements or should it accommodate future growth requirements? Consider network devices, telecom devices, and cabling. **Note:** If a resilient network configuration is employed, smaller MiVoice Business systems may not have multiple LAN connections. If multiple LAN connections are required, you must enable Spanning Tree protocol on the controller.	

Site Requirements

Table 2. Identifying Peripheral Requirements

Step	Telephone Requirement	Number	Reference
1. Record number:	IP phone users		None
	SIP users		
	DNIC phone users		
	Analog phone users		
	Console users		
	Hot desk users		
	External hot desk users		
	Voice mail users		
	Teleworkers		
	MiCollab Mobile users		
	MiCollab Audio, Web and Video Conferencing users		
	Wireless handset users (IP DECT)		
	ACD Agents (Hot Desk)		
	ACD agents (Standard)		
2. Identify required trunk interfaces	IP Trunking		
	XNET		
	PRI (# of links)		
	T1/D4 (# of links)		
	T1 MSDN/DPNSS (# of trunks)		
	LS (# of trunks)		
	LS Class (# of trunks)		
	BRI (# of links)		
	Other Interfaces:		
3. Define digital trunk protocols	T1 MSDN/DPNSS		
	DMS -100		
	DMS -250		
	4ESS		
	NI-2		
	QSIG		
	ETSI or ISO		
	EURO ISDN or R2		
	Other Protocols:		

Step	Telephone Requirement	Number	Reference
4. Record type and number of trunks	DS1 Links (14 Channels/Link T1)		Refer to the System Administration Tool Help for programming details.
	E1 Links (30 Channels/Link)		
	R2 Links (30 Channels/Link)		
	PRI Links (23 Channels/Link)		
	BRI Links		
	Analog CO		
	LS Class		
	E&M		
	DID		
	ISDN		
	SIP Trunks/SIP Line Side		
	Other Trunks:		

Table 3. Identifying Hardware Requirements

Hardware Components	Device, Feature, or Functionality	Number	Reference
Controllers/Server Platforms	CX II		See Engineering Guidelines for configuration tables. Refer to Hardware Technical Reference Manual for controller descriptions.
	CXi II		
	MXe III Standard		
	MXe III Expanded		
	AX		
	MiVoice Business for Industry Standard Servers (ISS)		See the Engineering Guidelines for these products for platform descriptions and configuration information.
	MiVoice Business VMware Virtual Appliance		
	MiVoice Business Multi-Instance		
Controller Modules With pre- 3300 Release 7.0 software, the T1/E1 Combo Card is only supported in CX/CXi systems. With Release 7.0 software or later, the T1/E1 Combo Card is supported in CX, CXi, MX, MXe, and LX systems.	Digital Signal Processor II (DSP II Module)		Refer to Hardware Technical Reference Manual for descriptions
	Digital Signal Processor - Dual		
	Digital Signal Processor - Quad		
	Echo Canceller		
	Dual FIM Module		
	Dual T1/E1 Framer Module (MX/LX)		
	T1/E1 Combo Card		
	T1/E1 Resilient Combo Card		
	Quad Basic Rate Interface (BRI) Framer		
	Quad CIMM		
Option Boards Option boards provide embedded analog capability directly on the MX/MXe and CX/CXi controllers.	Analog Main Board (Version III with protected ONS ports)		Refer to Hardware Technical Reference Manual for descriptions
	Analog Main Board		
	Analog Options Module		
Service Units Network Service Units (provide external TDM interfaces) Analog Service Units (provide external analog interfaces) Analog Service Unit II (provides external analog interfaces; supports Class Trunks and can provide CLID for Loop Trunks to an existing LX controller)	Universal T1/E1NSU		Refer to Hardware Technical Reference Manual for descriptions
	R2 NSU		
	Basic Rate Interface (BRI)		
	Universal Analog Service Unit		
	Analog Service Unit - 24 port		
	Analog Service Unit II		
AX Controller and ASU II Cards	4 + 12 Port Combo Card		Refer to Hardware Technical Reference Manual for descriptions
	16 Port ONSP Card		
	24 Port ONSP Card		

Hardware Components	Device, Feature, or Functionality	Number	Reference
Peripheral Cabinets and Cards	Peripheral Cabinets		Refer to Hardware Technical Reference Manual for descriptions
	SX-200 Bays with BCC III cards (Migration path only)		
	DNI line card		
	LS/GS trunk card		
	ONS CLASS/CLIP line card		
	ONS line card		
	E&M tie trunk card		
	OPS line card		
	DID/Loop tie trunk card		
	SUPERSET hub		
Digital Service Units and Cards	Digital Service Units		Refer to Hardware Technical Reference Manual for descriptions
	CEPT Formatter Card		
	DS1/T1 Formatter II Card		
	T1/E1 (DS1) Formatter Card		
	Basic Rate Interface Card		
	Primary Rate Interface Card		

Table 4. Identifying Peripheral Requirements

Peripheral Devices	Device, Feature, or Functionality	Number	Reference
MiVoice IP Phones **Note:** The MXe Server does not support the 5140 IP Phone, 5240 IP Phone, or the 5230 IP Appliance	5304 IP Phone		Refer to General Information Guide for descriptions.
	5320e IP Phone		
	M5324 IP Phone		
	5330e IP Phone		
	5340e IP Phone		
	5360 IP Phone		
	5560 IPT		
	Other Models:		
IP Phone Accessories	IP Programmable Key Module 12		
	IP Programmable Key Module 48		
	Line Interface Module		
	5610 DECT Cordless Handset		
	5610 DECT Standt		
	Cordless DECT Headset for 5330 / 5340 / 5360 IP Phones.		
	Cordless DECT Headset for 5330 / 5340 / 5360 IP Phones.		
	Other Accessories:		
Conference Phones	5310 IP Conference Unit		
	Other Conference Units:		
Collaboration Appliances (Audio, video, in-room presentation display)	MiVoice Video Unit		
	MiVoice Conference Unit (Audio, in-room presentation display only)		
Consoles	MiVoice Business Console		
	5540 IP Console		
Mitel Wireless/WiFi Phones	IP-DECT Wireless Solution (GLOBAL) • Site Survey Kit • Base Stations • Wireless Services Messaging Gateway (WSM) • 5602 Wireless Handset • 5603 Wireless Handset • 5604 Wireless Handset • 5606 Wireless Handset • 5607 Wireless Handset	_____ _____ _____ _____ _____ _____ _____ _____	Refer to IP-DECT Wireless Solution (GLOBAL) documentation on the Mitel Customer Documentation site.
	IP-DECT Wifi System (EMEA only) • Site Survey Kit • Portable Device Manager	_____ _____ _____	Refer to the Mitel WiFi System (EMEA) IP-DECT documentation on the Mitel Customer

Peripheral Devices	Device, Feature, or Functionality	Number	Reference
	• Wireless Service Messaging Gateway • Radio Fixed Parts Access Points • SIP Proxy Server (optional) • RADIUS Server (optional • 5624 Wireless Handset	_____ _____ _____ _____	Documentation site.
Third Party Wireless System	If present on site, identify • System Manufacturer/Supplier • System Model • Software Version • Supported Protocol(s) • Handset Models • Number of Handsets in use • Number of Radio Fixed Parts • Type of Management Interface	_____ _____ _____ _____ _____ _____ _____ _____	Obtain site configuration details to assess compatibly of third-party system with the MiVoice Business system
SIP Phones	5320 IP		Refer to System Administration Tool Help for list of supported RFCs.
	5330 IP		
	5340 IP		
	Other SIP Phones:		
Norstar Supported Phones CITELLink Gateway required to support these Norstar phones	M7100		Refer to the CITELlink Installation and Configuration (Nortel) Guide for details
	M7208		
	M7208N		
	M7310		
	M7310N		
	M7324		
	T7100		
	T7208		
	T7406		
	T7208		
Meridian Supported Phones ClTELLink Gateway required to support these Meridian phones	A2008		Refer to the CITELlink Installation and Configuration (Meridian) Guide for details
	M2006		
	M2008		
	M2616		
	M3110		
	M3310		
	M3820		
	M3901		
	M3902		
	M3903		
	M3904		

Peripheral Devices	Device, Feature, or Functionality	Number	Reference
Digital Phones	SUPERSET 4015		Refer to the General Information Guide for descriptions
	SUPERSET 4025		
	Other Models:		
Digital Phone Accessories	12 Button Programmable Key Module		
	48 Button Programmable Key Module		
Analog Phones	Mitel Analog Interface Module 2		
	Standard DTMF telephones		

Table 5. Identifying Embedded Application Requirements

Embedded Application	Details		Reference
ACD	Identify high-level requirements: • Extended Agent Skill Groups • Skill-Based Routing • Real-Time Event Recording • ACD Agent Hot Desking • ACD Scalability • ACD Express • Networked ACD		See the System Administration Tool Help: click **System Applications** > **Automatic Call Distribution**.
	Review ACD scalability options	❒	See the System Administration Tool Help: click **System Applications** > **Automatic Call Distribution** > **ACD** > **Conditions** > **ACD Scalability**.
	Plan ACD implementation • Identify Agent Staffing Levels • Define Call Handling • Review ACD Resource Maximums • Group Agents by skill type • Complete Agent Skill Planner • Complete Path Planner • Define Greetings and Announcements	 ❒ ❒ ❒ ❒ ❒ ❒ ❒	See the System Administration Tool Help: click **System Applications** > **Automatic Call Distribution** > **ACD** > **Programming** > **ACD Planning**
	Number of ACD Active Agents licenses	_____	
	Extended Agent Skill Groups • Requires Extended Agent Skill Groups configuration option enabled in License and Option Selection form • Number of Agent Groups • Number of Agents per group	 ❒ _____ _____	See the System Administration Tool Help: click **System Applications** > **Automatic Call Distribution** > **ACD** > **Programming** > **Extended Agent Skill Groups**.

Embedded Application	Details		Reference
	Skill-based Routing • Skills based routing is enabled by default. • Determine Skill Levels. Skill Level is a value between 1 (highest skill level) and 255 (lowest skill level) • Assign a skill level to each agent. Real Time Event Recording Records the activity of the entire ACD operation. Events are divided into two groups: • call events which report on individual ACD agent activity • group statistics events which provide a cumulative reports on agent skill group usage	❒ ❒	See the System Administration Tool Help: click **System Applications** > **Automatic Call Distribution** > **ACD** > **Programming** > **Skill-based Routing**. See the System Administration Tool Help >**System Applications** > **Automatic Call Distribution** > **Real Time Event Recording**.
ACD Hot Desk Agents	• 3300 Release 7.0 software or later is required. • Use of ACD hot desk agents and standard ACD agents in the same ACD system, is not supported. • ACD agent hot desking is only supported on ACD sets. • Review planning rules and licensing requirements • Is conversion of existing ACD agents required?	❒ ❒ _____	See the System Administration Tool Help: click **System Applications** > **Hot Desk ACD Agents**.
Networked ACD	• Identify Distributor system • Identify Answerpoint system 1 • Identify Answerpoint system 2 • Identify Answerpoint system 3 • Identify Answerpoint system 4	_____ _____ _____ _____ _____	See the System Administration Tool Help: click **System Applications** > **Automatic Call Distribution** > **Networked ACD**.
Bandwidth Management	• Obtain network diagram that identifies any existing network bottlenecks • Review site configuration examples in System Administration Tool Help • Create a zone tree diagram of site and labeled network elements, zones, and zone access points (ZAPs) • Obtain bandwidth limits from IT department that will be assigned to the voice media streams between the zones.	❒ ❒ ❒ ❒	See the System Administration Tool Help: click **Voice Networking** > **Manage Network** > **Bandwidth Management**.
Emergency Services Support	• Review country/state/province regulations that govern Customer Emergency Services ID (CESID) implementation	❒	See the System Administration Tool Help: click **System Applications** >

Embedded Application	Details		Reference
	• Identify Emergency Services Number (for example 911 or 999)	_____	**General Business Solutions** > **Emergency Services**.
	• CESIDs required for		
	• every phone or	❒	
	• shared phones?	❒	
	• SIP devices	❒	
	• Record number of CESIDs required for site	_____	
	• Obtain CESIDs from local carrier	❒	
	• Obtain contact information for Public Service Access Point (PSAP)	❒	
	• Ensure Layer 2 switches on site support Cisco Discovery Protocol (CDP), Spanning Tree Protocol (STP), or Link Layer Discovery Protocol (LLDP)	❒	
	• Ensure system configuration provides all extensions with access to outgoing trunks	❒	
	• Should attendant be notified of emergency calls (Local Notification)?	❒	
	• Is Emergency Response Advisor (NA only application) required?	❒	
FAX Support	• Identify types of FAX support required		See the System Administration Tool Help: click **Features D to G** > **FAX Over IP Support**.
	• PSTN using analog signaling	❒	
	• IP Networking using G.711 pass through	❒	
	• IP Networking using FAX Relay (T.38)	❒	
	• FAX Relay T.38 support requires:		
	• 3300 Release 9.0 or later software	❒	
	• DSP II module (PN50005751)	❒	
	• T.38 Licenses and Compression Licenses	❒	
	• Supported only on MXe, CX/CXi, and AX controllers	❒	
Hot Desking (Hot Desking requires licenses)	• Identify type of hot desking configuration		See the System Administration Tool Help: click **System Applications** > **Mobility** > **Hot Desking** or **External Hot Desking**.
	- Nodal	❒	
	- Clustered	❒	
	- Resilient Clustered	❒	
	- External Hot Desking	❒	
	Note: Resiliency increases licensing requirements.		

Embedded Application	Details		Reference
	• No. of Hot Desk users • No. of IP User Licenses required (one per user)	_____ _____	For licensing requirements, see the System Administration Tool Help: click **Hot Desking** > **Programming** > **Overview**.
Hotel/Motel (Hospitality)	• Record number of guest rooms • Determine guest room extension numbering (same as room numbers?) • Define call restrictions from rooms • Is call blocking required between rooms? • Is message registration (call metering) required? • Is a 5540 IP Console or MiVoice Business Console required for the front desk? • Identify printer requirements.	_____ _____ ❒ ❒ ❒ ❒ ❒	See the System Administration Tool Help: click **System Applications** > **Hospitality** > **Hotel/Motel**.
	• Is Voice Mail Hospitality/PMS option (purchasable option in License and Option Selection form) required?	❒	See the System Administration Tool Help: click **System Applications** > **Hospitality** > **Hotel/Motel** > **Property Management System**.
	Are Suite Services required • Single Suites • Linked Suites	 ❒ ❒	See the System Administration Tool Help: click **System Applications** > **Hospitality** > **Suite Services**.
Multi-Level Precedence and Pre-emption (MLPP)	• Requires MLPP option (purchasable option in License and Option Selection form) • Supported for incoming and outgoing trunk calls on T1 ISDN PRI circuits, and for internal calls (calls between stations on the same switch) • Assign maximum Precedence levels to the directory numbers of users • Assign users to Service Domains	❒ ❒ ❒ ❒	See the System Administration Tool Help: click **System Applications** > **General Business Solutions** > **MLPP**.
Music On Hold	Check applicable copyright laws. Is a license required from the local performing rights society or copyright owner to use a music source?	❒	See the System Administration Tool Help: click **Feature Reference** > **Features M to O** > **Music on Hold**.

Embedded Application	Details		Reference
	Identify type of Music on Hold required		
	• Embedded	❒	
	• Digital	❒	
	• Analog	❒	
	• Live Music on Hold over IP	❒	
	Embedded Music on Hold requires		See System Administration Tool Help: click **Forms Reference** > **Forms S to Z** > **System Audio Files Update**.
	• Audio file in the following format: WAV, A-law or m-law (G.711), 8 kHz, 8-bit, mono.	_____	
	• Music on Hold limits are dependent on system type. Identify system limits on		
	• Total size of audio files (MB)	_____	
	• Maximum audio time	_____	
	• Maximum number of music files	_____	
	Digital Music on Hold requires:		See the Hardware Technical Reference Manual for specifications
	• an external music source (for example, radio) connected to a DNIC Music on Hold/Pager Unit (DMP)	❒	
	• the DMP must be connected to a Peripheral Cabinet DNI Line Card	❒	
	Analog Music on Hold requires an external music source (for example, radio) connected to the		
	• controller	❒	
	• Universal ASU, or	❒	
	• E&M Trunk Card in a peripheral cabinet	❒	
	Live Music On Hold Over IP requires:		See the System Administration Tool Help: click **Feature Reference** > **Features M to O** > **Music on Hold.**
	• IP or SIP device license	❒	
	• persistent Internet connection	❒	
Paging	• Loudspeaker Paging (emulates E&M paging), or	❒	See the System Administration Tool Help, See the System Administration Tool Help: click **Features Reference** > **Features M to O** > **Paging**.
	• IP Paging	❒	
	Loudspeaker Paging requires		
	• Loudspeaker Pager (amplifier)	❒	
	• Connects to paging port on Universal ASU, Analog Main Board, or Analog Option Board	❒	
	IP Paging requires		
	• IP Paging Unit	❒	
	• Loudspeaker Pager (amplifier)	❒	
	• Connects to IP network	❒	

Embedded Application	Details		Reference
	• No. of paging zones (15 max) • No. of paging groups	_____ _____	
Property Management System	Requires Voice Mail Hospitality/PMS option (purchasable option in License and Option Selection form) Identify type of connection required between PMS system and the MiVoice Business system: • Direct IP Connection (3300 ICP Rel 6.0 or later required) • RS-232 Connection via a Serial Port Converter (such as the Precidia Technologies Ether232)	❒ ❒ ❒ ❒	See the System Administration Tool Help: click **System Applications** > **Hospitality** > **Property Management System (PMS)**.
Ring Groups	• Ring Groups required? • Type of ring group - ring all extension simultaneously - one at a time (Cascade) - personal Ring Groups • No. of ring groups (max 176) • No. of members in each group (max 32) • Identify ring group overflow points	❒ ❒ ❒ ❒ _____ _____ ❒	See the System Administration Tool Help: click **Features Reference** > **P to R** > **Ring Groups** or **Ring Groups - Personal**
Station Message Detail Recording (SMDR)	• Printer or suitable output device available? Identify recording requirements: • Internal SMDR • External SMDR • Extended Recording Level 1 • Extended Recording Level 2	❒ ❒ ❒ ❒ ❒	See the System Administration Tool Help: click **System Applications** > **General Business Solutions** > **SMDR**.
Tenanting	• Requires Tenanting option (purchasable option prior to MCD 5.0) • Tenanting is NOT supported - in clusters or networks - with hot desking - with resiliency • No. of tenants (max 64) • Block or allow calls between tenants? • Create lists of shared and tenant specific features • Night Service switching done centrally or on a tenant by tenant basis?	❒ ❒ _____ _____ ❒ _____	See the System Administration Tool Help: click **System Applications** > **General Business Solutions** > **Tenanting**.
	• Tenant specific music on hold required?	_____	

Embedded Application	Details		Reference
Voice Mail (Embedded Messaging) Note: AX controller requires a 4 GB flash upgrade to support embedded voice mail.	Identify number and type of mailboxes (maximum 750)		See the System Administration Tool Help: click **System Applications** > **Messaging** > **Voice Mail (Embedded)**.
	• Extension Mailboxes	❒	
	• Message Only	❒	
	• Transfer Only	❒	
	• Information Only	❒	
	• Auto Attendant Park and Page	❒	
	Collect the following information:		
	• Length of mailbox numbers (default 4)	_____	
	• Business Hours	_____	
	• Required prompt languages	_____	
	Identify feature requirements		See the System Administration Tool Help: click **System Applications** > **Messaging** > **Voice Mail (Embedded)** > **Features**.
	• Automated Attendant	❒	
	• Multi-Level Auto Attendant	❒	
	• Bilingual Option	❒	
	• Message Notification	❒	
	• Visual Voice Mail	❒	
	• Record Announce Devices (RAD)	❒	
	• System Greetings (Primary, Alternate, RAD Greetings)	❒	
	• Voice Mail Softkeys	❒	
	• Advanced Voice Mail option (purchasable option prior to MCD Release 5.0). Enables the Record-A-Call, Forward to E-mail and Personal Contacts features.	❒	
	• Property management System (PMS) Integration (purchasable option in License and Option Selection form)	❒	
Voice Mail (Networked)	Supported for		See the System Administration Tool Help: click **System Applications** > **Messaging** > **Networked Voice Mail**.
	• Embedded Voice Mail Servers (networked and clustered)	❒	
	• NuPoint Unified Messenging Servers	❒	
	Requires		
	• Voice Mail Networking option on every MiVoice Business element in cluster or network. (purchasable option in License and Option Selection form)	❒	
	• MiVoice Enterprise Manager	❒	
	Ensure LAN/WAN provides sufficient bandwidth to accommodate the messaging load.	❒	

Table 6. Identifying External Application Requirements

External Application	Details		Reference
Conferencing, Collaboration, and Mobility			
Mitel MiCollab	Identify system configuration • Server only mode (internal server on LAN) • Server gateway mode (internet facing server with firewall capability) Identify required applications • MiCollab Unified Messaging and Speech Auto Attendant • Suite Application Services (Provides single-point user services provisioning and centralized management of shared system resources for all the MAS applications.) • MiBorder Gateway (Provides Teleworker, Secure Recording Connector, SIP Trunking, and Web Proxy services) • MiCollab Audio, Web and Video Conferencing • MiCollab Client, Mobile Client, Web Portal (Provides collaboration and softphone capabilities regardless of location or device—i.e., as software client or through web browser on PC or app on tablets and smartphones.)	❒ ❒ ❒ ❒ ❒ ❒ ❒	See the Mitel MiCollab Installation and Maintenance Guide
	Review • Hardware and software requirements • Performance and capacities • Licensing requirements • Router/gateway/firewall requirements Record number of end-user portal web sessions required	❒ ❒ ❒ ❒ _____	See the Mitel MiCollab Engineering Guidelines and the blade engineering guidelines
Teleworker	Teleworker on • MiCollab Server (MiBorder Gateway) • MiVoice Border Gateway (Standalone) Number of Teleworkers	❒ ❒ _____	The MiVoice Border Gateway is a standalone Teleworker solution for high-volume sites (100 to 4000 users) Refer to the MiCollab

External Application	Details		Reference
	Identify configuration		Engineering Guidelines and Teleworker Engineering Guidelines
	• Server only mode (internal server on LAN)	❒	
	• Server gateway mode (internal facing server with firewall)	❒	
	Corporate site requirements:		
	Hardware:		
	• Mitel MiCollab Server	❒	
	• Qualified standalone server, or	❒	
	Software:		
	• Compatible MiVoice Business software release	❒	
	• Mitel MiCollab or MSL software version	❒	
	• Teleworker blade	❒	
	Other:		
	• Teleworker licenses	❒	
	• Compatible IP Phones	❒	
	• Firewall	❒	
	• Daisy chained servers (optional)	❒	
	Remote site requirements		
	• IP Phones	❒	
	• Router or Internet Gateway	❒	

External Application	Details		Reference
MiCollab Client, Mobile Client, Web Portal MiCollab Audio, Web, and Video Conferencing	Hardware: • MiCollab Server Appliance (ncludes the pre-installed MSL operating system and MiCollab software blade) • approved MSL hardware platform (for Mobile Client blade) • VMware-approved hardware platform (for Virtual MiCollab) Software: • Compatible MiVoice Business software release • compatible MSL software • MiCollab blade Other: • Supported MiVoice Business desk phone or softphone • Supported mobile device (tablet, smartphone) • Supported USB headset or handset (to use MiCollab Client embedded softphone) • MiCollab Mobile Client licenses • Supported web browser • Firewall and Bandwidth requirements Review performance	❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒	See the Unified Communicator Mobile Engineering Guidelines
Secure Call Recorder	Hardware MiVoice Border Gateway server Software • MSL Software • SRC blade Other • SRC Licenses • Firewall • DHCP Configuration Note: SRC cannot reside on the same server as the Teleworker application	❒ ❒ ❒ ❒ ❒ ❒ ❒	Refer to Qualified Hardware List for MSL at Mitel Online Refer to the Secure Call Recorder Installation and Maintenance Manual

External Application	Details		Reference
Unified Communicator Express (UCX) Desk phone companion or a softphone	Software: • Compatible MiVoice Business software release Other: • Supported MiVoice Business desk phone • Compatible Windows PC • Compatible version of Microsoft® Outlook • Compatible version of Microsoft® Windows Active Directory • SIP user license for each softphone user	❒ ❒ ❒ ❒ ❒	Refer to Unified Communicator Express IT and Administrator Guide
Live Business Gateway (Microsoft® Live Communications Server and Office Communicator Desktop)	System configuration requirements include • Mitel 3300 ICP (Rel 7.0 UR2 or higher) • Mitel Live Business Gateway Release 3.1 (available for Windows and Linux operating systems) • Microsoft® OCS 2007 (or LCS 2005 Service Pack 1) • Microsoft® Office Communicator • Microsoft® Active Directory Server • Mitel supported phone (IP or DNIC) • Layer 2 Ethernet Switch • Mitel Standard Linux Release 8.2 or higher (for the Linux version only) Review the following • Gateway workstation requirements • Security considerations • Bandwidth requirements • Performance guidelines	 ❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒	Refer to the Live Business Gateway Installation and Maintenance Guide and the Live Business Gateway Engineering Guidelines
Messaging Solutions			
NuPoint Unified Messenging (Standalone)	Record number of required • voice mailboxes • channels/ports • prompt sets • web sessions Collect the following information to determine the message storage requirements • Maximum number of messages allotted per user • Days to keep read messages • Days to keep unread messages • Message File Format used	 _____ _____ _____ _____ _____ _____ _____ _____	See the MiCollab Unified Messaging Engineering Guidelines for details.

External Application	Details		Reference
	Review Engineering Guidelines for		See the NuPoint Unified Messenging Engineering Guidelines.
	• Server hardware requirements	❒	
	• Deployment scenarios	❒	
	• Pre-Installation requirements	❒	
	• Network guidelines	❒	
	Identify platform		
	• Distributed Data Center (AANAS Platform with Active/Active Model)	❒	
	• NuPoint Unified Messenging IP Server	❒	
	• NuPoint Unified Messenging IP Model 640	❒	
	Identify system integration		In the NuPoint Unified Messenging Technical Documentation Help > **Integration Types**.
	• ESMI	❒	
	• T1/D1 SMDI	❒	
	• Enhanced Data Link	❒	
	• PMS	❒	
	• Enhanced Inband	❒	
	• Digital		
	- Intel PBX IP Media Gateway	❒	
	- Intel T1 IP Media Gateway	❒	
	Resiliency required?	❒	In the NuPoint Unified Messenging Technical Documentation Help > **Hardware and System Information** > **Resiliency**.

External Application	Details		Reference
NuPoint Unified Messenging (Standalone) - continued	Identify optional features (licenses must be purchased for optional features): • Call Detail Recorder • Call Director • Competitive TUI Emulator • Cut-Through Paging • Dual MWI Support • European French Prompts • NP Fax • NP Admin API • NP Admin Mailbox Administration • NP Forms • NP Net • NP On Demand • NP Rapid Dial • NP Receptionist • NP Wakeup • Record a Call • Recorded Announcement Device • SMSC-SMPP • SMS Notification (UK only) • Speech Auto Attendant • Superset Softkeys • Unified Messaging • VPIM	❒ ❒	In the NuPoint Unified Messenging Technical Documentation Help > **Optional Features.**
Customer Interaction Solutions (MiContact Center Solutions)			
MiContact Center Enterprise Edition	Solution for sophisticated call center • Greater than 25 agents • More than five supervisors	 ❒ ❒	See the Customer Interaction Solutions General Information Guide for an overview of the solutions.
MiContact Center Business Edition	Solution for basic call center • 25 agents or fewer • Fewer than five supervisor	 ❒ ❒	
Add-on applications available for both MiContact Center Enterprise Edition and MiContact Center Business Edition	Interactive Contact Center • provides virtual queuing Interactive Visual Queue • provides agent call monitoring within queues	 ❒ ❒	See the Customer Interaction Solutions User Guide.

External Application	Details		Reference
	Contact Center Softphone • allows agents to use their computers as an agent IP phone	❒	
	Intelligent Queue • provides recorded announcements to callers	❒	See the Intelligent Queue Installation Guide
	Agent Portal • displays call information on agent desktop computer	❒	See the Agent Portal - Installation and Configuration Guide
	Traffic Analysis • reports traffic data	❒	See the Call Accounting Installation Guide and the Call Accounting Reports Guide
	Call Accounting • enables you to monitor and control telecommunications costs,	❒	
Add on applications available for Contact Center Enterprise Edition only	Contact Center Management Enterprise Node • provides historical reporting and real-time monitoring	❒	See the Customer Interaction Solutions User Guide.
	• ACD Resiliency • provides ACD agent resiliency in conjunction with MiVoice Business resiliency • ACD Hot Desk Agents required • identify level of ACD Resiliency required • Basic Resiliency • Advanced Resiliency • Full Resiliency	❒ ——— ❒ ❒ ❒	See the MiVoice Business Resiliency Guidelines
	High Availability • supports failover to secondary server	❒	See the Customer Interaction Solutions User Guide.
	Multimedia Contact Center • Integrates with Microsoft® Exchange 2003 to provide distribution of emails, chats and faxes.	❒	See the Multimedia Contact Center Installation Guide
	Contact Center Scheduling • displays agents activities in relation to a schedule	❒	See the Contact Center Scheduling Installation Guide
Add on applications available for Contact Center Enterprise Edition only	Schedule Adherence • works with Contact Center Scheduling to show you what agents are doing in relation to what is scheduled, in order to quickly identify areas of non-adherence	❒	See the Customer Interaction Solutions User Guide.

External Application	Details		Reference
	Flexible Reporting • customizes reports and report templates	❒	
MARATHON INSPIRATIONPro:	• customizes reports and report templates provides contact center agent call recording (external management application)	❒	
Wireless Solutions			
IP-DECT Wireless Solution (GLOBAL)	• Site survey complete • Site plan available • No. of base stations • Wireless Services Messaging (WSM) Gateway • No. of handsets	_____ _____ _____ _____ _____	See the IP DECT Wireless Solution (GLOBAL) Site Survey Guide
IP-DECT Wireless Solution (EMEA only)	• Site survey complete • Site plan available • No. of RFPs • No. of RFP Clusters • No. of handsets	_____ _____ _____ _____ _____	See the IP DECT Wireless Solution (EMEA) Site Survey Guide
	Each RFP requires any one of the following –48v DC power supplies: • 802.3af compliant power supply • Inline Power Adapter - UK variant: PN 50002080 - International variant: PN 50002090 • Power Adapter (from DeTeWe Corp) - UK variant: PN 51007304 - International variant: PN 51007304	 ❒ ❒ ❒ ❒ ❒	See the Mitel IP DECT Technical Manual
	Handsets • MiVoice Business IP User License required for each handset • MiVoice Business IP User License required for each user RFP Licensing • License A: For small installation sites with 1 or 2 RFPs. • License B: For large installation sites with 3 to 256 RFPs. • License C: Upgrade from A to B.	 _____ _____ ❒ ❒ ❒	

External Application	Details		Reference
Third-Party Equipment Solutions			
CITELLink Gateway	Types of phones on site: • Norstar 7000-series IP Phones • Meridian 1 IP phones • Both	 ❒ ❒ ❒	Ensure set models that are on site are supported by the gateway. See **Error! Reference source not found.** for a list of the supported models.
	Gateways required: • PN 1695MTLHSG supports up to 24 Norstar 7000-series IP phones • PN 1898MTLHSG supports up to 24 Meridian 1 IP phones	 ❒ ❒	
	Also required • Layer 2 switch programmed for 10-Base-T Ethernet 1/2 duplex • MiVoice Business controller must have Release 4.1 software or later • IP User License for each Norstar or Meridian set	 ❒ ❒ ❒	See the CITELLink Installation and Maintenance Guides on the Mitel Customer Documentation site

Table 7. Identifying Management Application Requirements

Management Application	Details		Reference
MiVoice Enterprise Manager	Review		See the MiVoice Enterprise Manager Engineering Guidelines and MiVoice Enterprise Manager Technician's Handbook
	• platform requirements	❒	
	• client station requirements	❒	
	• LAN/WAN requirements	❒	
	• Firewall requirements	❒	
	Identify number and type of nodes in network	❒	
	Identify number of licenses required for nodes (not all node types require licenses)	❒	
	Identify required options:		
	• Report Generator	❒	
	• HP OpenView	❒	
	Identify management/diagnostic tools		
	• Mitel Communications Director (MCD) Software Installer	❒	
	• Voice Quality Manager (IP Phone Analyzer)	❒	
	• Audio File Manager	❒	
	• ISDN Maintenance and Administration Tool (IMAT)	❒	
	• Integrated User Management	❒	
	• Alarm Monitor	❒	
	• Viola NetAlly RealTime Client	❒	
Management Access Point (MAP) Provides secure remote management access and optional alarm monitoring of network nodes (for example 3300 ICP or SX-2000 systems) over public network connections.)	Remote Management option is enabled by default on MiVoice Business.	❒	See the System Administration Tool Help. See 7100 MAP Product Information Guide
	Identify number and type of network nodes	_____	
	Identify types of remote access required:		
	• Dialup network (PPP) access	❒	
	• VPN access over WAN	❒	
	Identify model(s) of MAP required:		
	• MAP Pro: provides access to up to 5 nodes. Wall mountable.	❒	
	• MAP E/M: provides access to up to 5 nodes. Rack mountable.	❒	
	• MAP E/M/S/U: provides access to up to 16 nodes and includes an Uniterruptible Power Supply (UPS). Rack mountable.	❒	

Management Application	Details		Reference
Call Recording Solutions	Identify Call Recording Solution requirements: • MARATHON EVOLUTION: records analog, digital, DNIC and trunk side calls for large sites • MARATHON EVOlite:records analog, digital, DNIC and trunk side calls for small sites • MARATHON IP Monitor: records VoIP calls • Players to replay recorded calls - PowerPlay - WebPlay - Instant WebPlay • MARATHON INSPIRATIONPro: provides contact center agent call recording For other MiVoice Business compatible call recording solutions, consult the Mitel Global Solutions Catalog at Mitel.com. Review hardware and software requirements	 ❒ ❒ ❒ ❒ ❒ ❒ ❒ ❒	See the Call Recording Solutions General Information Guide for details.
Emergency Response Adviser (not available in UK)	Provides local security personnel with emergency call display on a response console. Review computer requirements for ERA server and remote terminals Identify licensing requirements: • Main Terminal license includes use of one remote terminal • Additional remote terminal licenses (up to 92 remote terminals)	❒ ❒ _____ _____	Emergency Response Advisor Installation and Maintenance Guide

Table 8. Identifying MiVoice Business Networking Requirements

Step	Details		Reference
1. Identify MiVoice Business networking and clustering requirements			
Will site be networked or clustered to other systems?	• A network is a group of elements that are interconnected via IP trunks and/or DPNSS over T1 or E1 trunks. Each network element is configured with a Primary Node Identifier (PNI) that allows calls to be routed between the elements. • A cluster is a group of interconnected elements that are configured together in such way that it appears to the end users that they are connected to a single large system.	❒ ❒	See the System Administration Tool Help: click **Voice Networking** > **Configure Network** > **Planning** for a planning table and illustrated example.
How many elements in a cluster?	Licensing supports clusters that have up to 30, 60, or 999 elements.	_____	
Is clustered hospitality required	Provides hotel/motel features across a cluster	_____	
Is MSDN/DPNSS required?	MSDN/DPNSS is a digital signaling system that provides features across a private network of systems	_____	See the System Administration Tool Help: click **Voice Networking** > **Network Features** for descriptions of the supported features.
Are SIP based services required?	• SIP trunks allow MiVoice Business to connect to the Service Provider through the SIP protocol over the IP network. • The SIP trunking solution provides basic feature functionality, billing capability, Emergency Services support, and FAX support. • Quick Conference SIP unit. What is the maximum number of expected conferences?	_____	See the System Administration Tool Help for a description of the supported SIP functionality.
2. Identify System Data Synchronization (SDS) requirements			
SDS	Reduces the time required to set up and manage networks and/or clusters of MiVoice Business systems by allowing you to • compare the data in a programming form of one system against the data in same form on another system. • start sharing system form data among a network or cluster of elements (MiVoice Business systems) • synchronizes the form data from a master element across the forms on the other network	❒	See the System Administration Tool Help: click > **Voice Networking** > **Manage Network** > **System Data Synchronization**.
	If SDS will be used for initial site configuration, identify a master controller.	_____	

Step	Details		Reference
3. Identify resiliency requirements			
IP Device Resiliency is configured and maintained from the MiVoice Business System Administration Tool using RDN Synchronization.	Embedded Resilient Device support (allows you to configure and maintain device resiliency from the System Admin Tool using RDN Synchronization)	❒ ❒	See the Resiliency Guidelines In the System Administration Tool Help: click **Voice Networking** > **Manage Network** > **Embedded Resilient Device Support**.
4. Identify Multi-Node Management Requirements			
Multi-Node Management (MNM) applications allow you to maintain a group of network elements that are grouped together within an SDS Administrative Group.	You can log in to a system administration tool session on an element in the administrative group and perform the following management tasks on other remote elements in the administrative group: **Application Reach Through** - access and program the forms that are not sharable through System Data Synchronization (SDS). **Fault Management** - monitor a summary of alarms for the administrative group or view the alarm details for each member node. **Backup and Restore** - perform database backups from one or all of the elements in the administrative group, or restore a database backup to a remote element in the administrative group.	❒ ❒ ❒	See the System Administration Tool Help: click **Voice Networking** > **Manage Network** > **Multi-Node Management**.
Resiliency requires additional licenses and may require additional controllers. Hunt Group resiliency is required to support Mitel MiCollab Unified Messaging resiliency.	Device resiliency	❒	See the Resiliency Guidelines for descriptions of functionality and hardware and software requirements. Refer to Appendix A of the Resiliency Guidelines for engineering rules.
	IP console resiliency	❒	
	Resilient Hot Desking	❒	
	Hunt group resiliency	❒	
	Resilient Ring Groups	❒	
	ACD resiliency	❒	
	SIP Endpoint Resiliency	❒	
	Embedded T1/E1 trunk resiliency (T1/E1 Combo MMC - PN 50005160)	❒	

Table 9. Identifying IP Network Requirements

Step	
1.	How many users on the network? How are they distributed and where are they located?
2.	Is the network adequately sized to support the number of network users, features, and resources?
3.	Are IP networking and compression required?
4.	Have bandwidth limits and zones been identified?
5.	Are there remote workers?
6.	What level of redundancy is required? Redundant power supplies and UPS? Redundant uplinks to network servers and devices?
7.	How is power distributed? Is power backup needed? For example, UPS, backup power generation, backup power generation, and multiple feeds?
8.	Does the existing cable plant need to be upgraded?
9.	Check the capacity of the switches that feed on to the core as well as those that feed the access layer. The network should never bottleneck. Deploy non-blocking, high-performance, high capacity switches.
10.	Consider points of failure and design the network to minimize the impact of failure. Use resilient systems, redundant network configurations, spanning tree, and so forth.

Site Engineering

Table 10. Engineering the System Solution

Step	Details	Reference
1. Determine system configuration:		
Identify business model	Multiple units system	Refer to Engineering Guidelines
	Distributed system	
	Hybrid model	
Review provisioning rules	System resources	
	Traffic	
2. Determine Voice over-IP (VoIP) requirements:		
Review requirements:	Maintaining voice quality of service	Refer to Engineering Guidelines
	Maintaining availability of connections	
	Start-up and DHCP	
	802.1X EAP-MD5 Authentication	
	VMPS, CDP and Location Change Indication (E911)	
	Network considerations	
3. Apply site engineering rules to configuration:		
Site configuration rules	IP networking and trunks	See Engineering Guidelines
	# of DSPs versus Compression Licenses	
	Licensing	
4. Determine power requirements:		
	Controller power input	See Engineering Guidelines and Hardware Technical Reference Manual
	IP phone power (local and remote)	
	Power over Ethernet	
	Optional 5220 IP phone accessories	
	Uniterruptible power supply (UPS)	
5. Plan licensing:		
Review licensing rules	System licenses	See Engineering Guidelines
	Device and user licenses	
Note requirements for AMC connection	MCD Software Installer (SI) Tool	See Technician's Handbook
	DNS Name Resolution	
	TCP/IP source port on SI Host	
	TCP/IP destination port on AMC	
	SI Host PC behind an HTTP Proxy Server	

Step	Details	Reference
Note requirements for AMC connection (cont.)	MiVoice Business DNS Name Resolution TCP/IP Source Port on the ICP ICP behind an HTTP Proxy Server CX/CXi-Specific WAN Considerations	See Technician's Handbook
6. Check site design through the System Engineering Tool. You can obtain this tool from Mitel Online at Training > Technical Training > Technician's Tool box. Download the System Engineering Tool from the Technician's Toolbox web page.		
7. Plan system programming parameters		
Determine the site settings for these system programming forms.	License and Options DHCP Options Interconnect Restrictions Compression Zone Assignment Class of Service Class of Restriction Trunk Circuit Descriptors	Refer to **Forms Reference** in the System Administration Tool Help.
	Automatic Route Selection	See the ARS Training Module for programming examples and the System Administration Tool Help
	Call Rerouting Pickup Groups Page Groups	See **Forms Reference** in the System Administration Tool Help.
8. Plan voice mail		
Embedded Voice Mail	• Capacities • Default settings • Mailbox types (extension, message only, transfer only, information only) • Voice mail features • Auto attendant features • Multi-level auto attendant • System greetings • RAD greetings • Voice mail and PMS support	In the System Administration Tool Help, see **System Applications** > **Messaging** > **Voice Mail (Embedded)**

Step	Details	Reference
External Voice Mail (NuPoint Unified Messenging - Standalone)	Integration type: • T1 or E1 integration with Simplified Message Desk Interface (SMDI) • Digital or analog integration with Intel PBX IP Media Gateways (PIMGs) • IP integration with MiVoice Business Hardware requirements Software requirements Planning parameters	Refer to the NuPoint Unified Messenging Start Here Guide and NuPoint Unified Messenging General Information Guide.
Networked Voice Mail	Your LAN/WAN must provide sufficient bandwidth to accommodate the messaging load for incoming and outgoing VPIM messages	In the System Administration Tool Help, see **System Applications** > **Messaging** > **Networked Voice Mail** > **Planning for Networked Voice Mail**
9. Plan cluster		
Define the cluster on the site plan	Assign PNIs if network has multiple clusters or standalone elements connected in a MSDN/DPNSS network Assign name to each cluster element Assign unique 1 to 3 -digit CEID index to each element Assign a unique 1 to 7 digit CEID digit string to each element. CEID digit strings must have the same number of digits Assign a unique Feature DN number to each cluster element	In the System Administration Tool Help, see **Voice Networking** > **Configure Network** > **Planning**
10. Perform wireless phone site survey		
IP-DECT wireless phones	• Survey site premises and identify possible locations for RFPs • Set up the kit • Enroll the test handsets • Take measurements • Determine number and adjust location of RFPs or base stations based on measurements	Refer to the • IP-DECT Wireless Solution (GLOBAL) Site Survey Guide, or • IP-DECT Wireless Solution (EMEA) Site Survey Guide Note that there are two variants of the IP-DECT Wireless Solution. The EMEA version is not supported in North America.
Spectralink wireless phones	• You perform a survey of the Access Point coverage after you have installed the Access Points. • The Spectralink wireless phones have a test mode that allows you to measure signal coverage.	Refer to “Certifying the NetLink e340/i640 Wireless Telephones" in the Netlink e340/i640 Setup and Administration Guide.

Step	Details	Reference
11. Plan the resilient network		
Determine	Network configuration Resilient topology IP device distribution License requirements Resilient clustered hot desking VLANs and DHCP options Call routing ARS routes T1/E1 resiliency configuration Resiliency support for voice mail Resiliency support for wireless sets	Refer to Resiliency Guidelines and Engineering Guidelines.

Table 11. Engineering the IP Network

Step	
1. Perform an assessment of the current network.	
2. Determine bandwidth and network performance requirements. How much bandwidth is required for the backbone, server, and end nodes. Identify required Zone Access Points (ZAPs).	
3. Design a network topology including the IP telephony equipment.	
4. Design a consistent end-to-end QoS policy, including VLAN 802.1p/Q and DSCP.	
5. Design a general network setup that includes DHCP, TFTP, firewalls, NAT, STP, CCDP, 802.1x.	
6. Consider ongoing network requirements. They continue to evolve after initial installation.	
7. Plan regular checks on voice quality performance.	
8. Consider staging the installation and commissioning if network is large.	
9. Review the following considerations for Layer 2 and LAN connections:	
Quality-of-service settings	Where needed within the Enterprise, ensure that VLAN (IEEE 802.1p/Q) is supported and can be configured. Consider the following: • Phone connection can handle both tagged and untagged traffic. • The port supports multiple egress queues. • The port supports Spanning Tree for emergency location. • The port supports power, if provided through the LAN. • Can the port that is connected to the MiVoice Business system provide VLAN and priority tagging?

Step	
Traffic and bandwidth	• Identify areas of high traffic. For example, ACD agents where additional bandwidth may be needed, or where a MiVoice Business system is required instead of a router. • Consider the network and traffic guidelines that are provided in the Engineering Guidelines. • Consider the IP address range and size. A larger range means less Layer 3 switching, but more broadcasts, negating the effect of the Layer 2 switching fabric.
DHCP	• Consider the location of the DHCP servers and the number of scopes to be handled. Note that each MiVoice Business system has its own DHCP server. • Consider the lease time for the DHCP server. A starting time of 8 hours is recommended. This time can be reduced in a more mobile environment, or increased in a more stable environment.
TFTP	• If a network has many phones, more TFTP servers decrease the time required for the phones to register. • Each MiVoice Business system has its own TFTP server, but you can also user additional external servers. Consider upgrades and how to control this across external TFTP servers.
10. Review the following considerations for Layer 3 and LAN connections:	
Quality-of-service Settings	• Ensure that routers have the ability to adjust MTU and support TOS/DiffServ settings. • For devices that bridge VLANs, ensure that the COS (Layer 2 priority) can be defined or that TOS/Diffserv to COS conversion is supported. • Ensure that the routers can provide ICMP-Redirect, especially where multiple paths may exist.
Traffic and bandwidth	• Identify areas of high traffic • Review the traffic and bandwidth information in the Engineering Guidelines. • If using a WAN link, ensure that you provide adequate Service Level Agreement on the connection. • Identify the type of connection between remote sites (for example, dedicated line, Frame Relay, MPLS, or VPNs) • Ensure that you have adequate bandwidth for the WAN protocol and for the number of channels. Consider signaling and end-device overhead. What is the CIR?
DHCP	• Where DHCP is used, but a local DHCP server is not available, ensure that the router is capable of forwarding DHCP requests (also known as "IP-helper" on certain products). • Ensure that DHCP forwarding loops are not created.

Step	
Firewalls and Network Address Translations (NAT)	• Firewalls provide restricted access • Ports for applications and voice may need to be opened or programmed • NAT is not application knowledgeable • Use of NAT may lead to one-way or no-way speech connections • Users of MiVoice IP Phones located on the Internet should use the TeleWorker solution. **Caution: Some applications that check firewall and network security monitor the LAN for anomalies in the traffic. Voice traffic sometimes appears as anomaly. Therefore, additional programming or exception conditions applied by this application are necessary to accept voice traffic as genuine.**
11. Consider the impact of the MiVoice Business system on the network, specifically performance, sockets, monitors, virtual phones, and phone displays. See the specific application guidelines, for example "Engineering Guidelines for the Teleworker Solution" available through Mitel Online.	

Licensing Requirements

Table 12. Recording Licensing Requirements

Device	License	Number	Reference
MiVoice Business License Requirements			
IP users & phones	IP Users license		See the MiVoice Business Engineering Guidelines for licensing information including descriptions of the license types and license limits.
User on ONS Phone	Analog Lines license		
CITELink phone	IP Users license		
User on TDM phone	No license, but counts against total number of users a system can handle		
Multi-device User	Multi-device Users (1 per standard group user)		
External Twinning Group	IP User and External Hot Desk User license (1 per twinning group)		
Hot Desk user	IP Users license		
Hot Desk ACD Agent	IP Users license		
External Hot Desk Users	External Hot Desk Users license (1 per user)		
ACD Agent	ACD Active Agents license		
ACD Agent Hot Desk	External Hot Desk Users license (1 per user)		
Voice Mailbox	Voice Mail license (1 per user)		See the MiVoice Business Engineering Guidelines for licensing information including descriptions of the license types and license limits.
Auto-Attendant - Basic	Voice Mailbox license		
Auto-Attendant - Multi-Level	Voice Mail license (1 per node in the tree)		
IP Networking (IP trunk)	One IP Networking license needed per ICP to enable IP Trunk calls (pre-MCD Release 5.0)		
Digital trunk (PRI, etc.)	One Digital Link license per digital trunk span		
SIP Trunks	SIP Trunk licenses (1 per trunk)		
Compression (TDM/IP)	A Compression license is needed for TDM to IP or IP to TDM calls that require the use of the DSP compression. One Compression license can handle up to 8 calls.		
Hospitality / PMS	An Embedded Voice Mail PMS license is required to use embedded voice mail for guest services. You must configure PMS features before the functionality will be available. ((MCD Release 5.0 and later.)		

Device	License	Number	Reference
Application Licensing Requirements			
Emergency Response Adviser (Not Available in UK)	Main Terminal License includes use of one remote terminal. Additional remote terminal require licenses (up to 92 remote terminals)		
NuPoint Unified Messenging (Standalone)	MiVoice Business requirements: • One IP User license per port to MiVoice Business NuPoint Unified Messenging requirements: • One Advanced UM license		
Mitel MiCollab Services	One UCC license (Entry, Standard or Premium), includes use of phone, NuPoint mailbox, and multi-device user group. Number of phones and type of MdUG varies by license type. Use of Teleworker, MiCollab Client, and MiCollab Audio, Web, and Video Conferencing required Standard or Premium license.		
Teleworker	One Standard UCC license plus an MiVoice Border Gateway license.		
Audio, Web, and Video Conferencing	One Standard UCC license plus an MiVoice Border Gateway license.		
Secure Recording Connector (SRC)	You need a quantity of “Secure Recording Connector” licenses equal to the total number of concurrent recording ports you will use. (A “port” corresponds to the recording of a two-party or multi-party conversation.) Licenses are available in packages of 1, 10, or 50.		
MiContact Center Enterprise Edition	MiVoice Business Requirements: • One IP User License per port to MiVoice Business MiContact Center Requirements: • Four licensing levels—Basic, Standard, Advance, Premium—support up to 350 agents per site, 750 agents per multi-site cluster, and 999 queues per site.		
MiContact Center Business Edition	MiVoice Business Requirements: • One IP User License per port to MiVoice Business MiContact Center Requirements: • 50 agents. Note: Multi-site support is not available with MiContact Center Business Edition		

Software Compatibility

Record the versions of the system software and external applications. Check Mitel Online to ensure that the system software version is compatible with the version of the external application.

Table 13. Recording Software Versions

System/Application	Current Version	Required Version
System Platform		
MiVoice Business system software		
System Name		
1. System Name_____	_____	_____
2. System Name _____	_____	_____
3. System Name _____	_____	_____
MXe Server system software		
System Name		
1. System Name _____	_____	_____
2. System Name _____	_____	_____
3. System Name _____	_____	_____
MiVoice Business for ISS system software		
System Name		
1. System Name _____	_____	_____
2. System Name _____	_____	_____
3. System Name _____	_____	_____
MiVoice Business Virtual Appliance system software		
System Name	_____	_____
1. System Name _____	_____	_____
2. System Name _____	_____	_____
3. System Name _____	_____	_____
MiVoice Business Multi-instance system software		
System Name		
1. System Name _____	_____	_____
2. System Name _____	_____	_____
3. System Name _____	_____	_____

System/Application	Current Version	Required Version
System Tools		
MiVoice Business Software Installer	_____	_____
Mitel Integrated Configuration Wizard (for MiVoice Business)	_____	_____
Mitel Integrated Configuration Wizard (for Mitel MiCollab)	_____	_____
Audio File Manager	_____	_____
Voice Quality Manager (IP Phone Analyzer)	_____	_____
ISDN Maintenance and Administration (IMAT)	_____	_____
Conferencing, Collaboration, and Mobility		
5540 IP Console	_____	_____
MiVoice Business Console	_____	_____
Mitel MiCollab		
Unified Messanging (blade)	_____	_____
Speech Auto Attendant	_____	_____
Teleworker (blade)	_____	_____
MiCollab Mobile Client (blade)	_____	_____
Managed VPN (blade)	_____	_____
Audio, Web, Video Conferencing	_____	_____
Secure Call Recorder	_____	_____
Live Business Gateway	_____	_____
Messaging Solutions		
NuPoint Unified Messenging (Standalone)	_____	_____
Speech Server	_____	_____
Messaging Gateway	_____	_____
Customer Interaction Solutions (Contact Center Solutions)		
MiContact Center Enterprise Edition	_____	_____
MiContact Center Business Edition	_____	_____
Wireless Solutions		
IP-DECT Wireless Solution (GLOBAL)	_____	_____
IP-DECT Wireless Solution (EMEA)	_____	_____
Third-Party Equipment Solutions		
CITELlink Gateway	_____	_____
Management Applications		
MiVoice Enterprise Manager	_____	_____
Management Access Point (MAP)	_____	_____
Call Recording	_____	_____
Emergency Response Adviser (not available in UK)		

Customer Proposal

Table 14. Creating a Customer Proposal

Step		Reference
1.	Consolidate customer requirements into a Statement of Work.	Download the Mitel Proposal Generator from Mitel Online. Use this tool to create a customer proposal.
2.	Obtain customer sign-off on proposal,	
3.	Consolidate customer requirements from approved proposal into a Statement of Work for customer to review	

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